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July 26, 2001  
(Date of Signature)

PATENT  
TH1042 (US)  
DSC

## THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of )

Rashmi K. Shah et al. )

Serial No. 09/168,770 )

Filed OCTOBER 8, 1998 )

FLAMELESS COMBUSTOR PROCESS HEATER )

GROUP ART UNIT 1744

EXAMINER: F. VARCOE Jr.

JULY 26, 2001

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TC 1700

ASSISTANT COMMISSIONER FOR PATENTS  
Washington, DC 20231

Sir:

### RESPONSE

The following remarks are responsive to an Office action mailed May 1, 2001, in the prosecution of the above-identified patent application. Reconsideration of this application in light of the following remarks is respectfully requested

### REMARKS

Claims 1-7 and 13-15 remain in the present application. Claims stand as rejected under 35 U.S.C. 102(b) over EP patent 0 450 872 A1 ("872").

The present invention relates to a process heater that includes an oxidation section where fuel and oxidant are combined and reacted without forming flames. This flameless reaction results in low NO<sub>x</sub> production, and relatively uniform heat distribution along surfaces of the oxidation volume because radiant heat from the flame is avoided.

Patent '872 discloses a reformer reactor that has a configuration with a burner in the center of a vessel containing catalyst. As the Examiner indicates in the office action, "Ruhl's Figure 1 appears to show a flame, and the reference number 50 is used to indicate a "flame zone"... since the fuel and oxidant are heated above the auto ignition temperature... prior to mixing, the system is capable of carrying out